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ABSTRACT

Developed through a modified DACUM (Developing a Curriculum) process involving business, industry, labor, and community agency representatives in Ohio, this document is a comprehensive and verified employer competency profile for power equipment technology occupations. The list contains units (with and without subunits), competencies, and competency builders that identify the skills needed to enter these occupations. The occupational, academic, and employability skills for this occupation or occupational area are included. Within the outline are three levels of items: core, advancing, and futuring. Core items identify the knowledge, skills, and attitudes essential for entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests. Advancing items identify the knowledge, skills, and attitudes needed to advance in the occupation; futuring items identify the knowledge, skills, and attitudes needed to enter and remain in a given occupation 3 to 4 years from now. This profile contains 24 units: professional behavior; hand tools; shop equipment; fasteners; welding, soldering, and heat-treating equipment; manufacturer's parts, service, and software materials; disassembly, inspection, and reassembly of two-cycle and four-cycle engines; ignition systems; fuel systems; governor systems; lubrication systems; cooling systems; lighting, accessory, and charging systems; engine tune-up; removing and stalling engines; power takeoff accessories; motion drive systems; frame, suspension, and steering systems; tires, wheels, and brakes; servicing multicylinder engines; troubleshooting; equipment maintenance and storage; customer relations; and employability skills. (NLA)

OCAP

OHIO'S COMPETENCY ANALYSIS PROFILE

POWER EQUIPMENT TECHNOLOGY

ED345067

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What is OCAP?

"A comprehensive and verified employer competency list will be developed and kept current for each program." This is the second objective of Imperative 3 of the *Action Plan for Accelerating the Modernization of Vocational Education: Ohio's Future at Work*. Ohio's Competency Analysis Profile (OCAP) lists are the Division of Vocational and Career Education's response to that objective. OCAP lists evolve from a modified DACUM process involving business, industry, labor, and community agency representatives from throughout Ohio. The OCAP process is directed by the Vocational Instructional Materials Laboratory at The Ohio State University's Center on Education and Training for Employment.

How is OCAP used?

Each OCAP contains units (with and without subunits), competencies, and competency builders that identify the occupational, academic*, and employability skills needed to enter a given occupation or occupational area. Within that outline there are three levels of items: core, advancing, and futuring. Core items identify the knowledge, skills, and attitudes essential for entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests (scheduled to begin in school year 1993-94). Advancing items (marked with one asterisk) identify the knowledge, skills, and attitudes needed to advance in a given occupation. Futuring items (marked with two asterisks) identify the knowledge, skills, and attitudes needed to enter and remain in a given occupation three to four years from now.

School districts may add as many units, subunits, competencies, and/or competency builders as desired to reflect local employment needs, trends, and specialties. Local advisory committees should be actively involved in the identification and verification of additional items. Using OCAP lists, instructors will be able to formulate their vocational courses of study and monitor competency gains via the new criterion-referenced competency testing program that will be directly tied to the competencies identified on the OCAP lists.

***Academic competencies have not been identified for all OCAPs. At a later date math, communication, and science competencies will be released.**

The **Employability Skills** portion of this list was verified by the following employer panel:

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Ohio Competency Analysis Profile
Power Equipment Technology

Unit 1: Professional Behavior

Competency 1.0.1: Identify and comply with shop safety rules

Competency Builders:

1.0.1.1 Follow general shop safety rules at all times
1.0.1.2 Locate first-aid station
1.0.1.3 Locate fire exits
1.0.1.4 Locate and use fire extinguishers
1.0.1.5 Inspect condition of extinguishers and other fire safety equipment regularly
1.0.1.6 Note liabilities and other legal considerations in servicing power equipment

Competency 1.0.2: Demonstrate appropriate dress and personal hygiene

Competency Builders:

1.0.2.1 Wear appropriate attire that is clean and well-maintained
1.0.2.2 Practice personal hygiene

Competency 1.0.3: Demonstrate leadership qualities

Competency Builders:

1.0.3.1 Arrive at shop on time and ready to work each day
1.0.3.2 Start all work assignments promptly
1.0.3.3 Demonstrate effective communication skills
1.0.3.4 Demonstrate effective social interaction skills
1.0.3.5 Demonstrate cooperation, enthusiasm, honesty, reliability, and trustworthiness
1.0.3.6 Complete work assignments on or ahead of schedule, stressing quality ahead of time
1.0.3.7 Maintain clean work area with tools in good working order
1.0.3.8 Maintain complete, accurate records of all jobs completed

Unit 2: Hand Tools

Competency 2.0.1: Practice established safety procedures in selection and use of hand tools

Competency Builders:

2.0.1.1 Check condition of each tool before using
2.0.1.2 Service tools as needed
2.0.1.3 Use tools as intended for specific tasks
2.0.1.4 Store tools in designated area

* Advancing
** Futuring

Competency 2.0.2: Select and use wrenches and screwdrivers

Competency Builders:

2.0.2.1 Check condition and accuracy of tools before using
2.0.2.2 Select and use socket wrenches
2.0.2.3 Select and use hex wrenches
2.0.2.4 Select and use Torx drivers and sockets
2.0.2.5 Select and use Allen wrenches
2.0.2.6 Select and use end wrenches
2.0.2.7 Select and use screwdrivers
2.0.2.8 Select and use torque wrenches
2.0.2.9 Clean tools and store in designated area after each use

Competency 2.0.3: Use manufacturer's special purpose tools

Competency Builders:

2.0.3.1 Use special purpose tools according to manufacturer's directions
2.0.3.2 Clean special purpose tools and store in designated area after each use

Competency 2.0.4: Select and use pliers and clamping tools

Competency Builders:

2.0.4.1 Check condition of tools before using
2.0.4.2 Service, adjust, or replace tools as needed
2.0.4.3 Select and use pliers
2.0.4.4 Use clamping tools
2.0.4.5 Clean tools and store in designated area after each use

Competency 2.0.5: Select and use diagnostic tools and equipment

Competency Builders:

2.0.5.1 Select and use precision measuring tools and instruments, including micrometers (inside and outside), dial indicator, vernier caliper, straight edge, and feeder gauge
2.0.5.2 Inspect and adjust, repair, or replace tools as needed
2.0.5.3 Set up and use electronic testing equipment
2.0.5.4 Clean tools and store in designated area after each use

Competency 2.0.6: Select and use cutting, impact, and forming tools

Competency Builders:

2.0.6.1 Select and use cutting tools
2.0.6.2 Select, inspect, set up, and use impact tools
2.0.6.3 Use forming tools
2.0.6.4 Clean tools and store in designated area after each use

Competency 2.0.7: Repair and recondition hand tools

Competency Builders:

2.0.7.1 Remove broken and unrepairable tools from service
2.0.7.2 Check tools for indications of needed repairs before and after each use
2.0.7.3 Repair or replace tools as needed

* Advancing
** Futuring

Unit 3: Shop Equipment

Competency 3.0.1: Use personal safety apparatus

Competency Builders:

3.0.1.1 Wear eye/face protection, safety shoes, gloves, and/or apron approved by Occupational Safety and Health Administration (OSHA)
3.0.1.2 Inspect personal safety apparatus for indications of needed repairs or replacement
3.0.1.3 Clean and repair safety apparatus regularly
3.0.1.4 Comply with all applicable OSHA standards
3.0.1.5 Comply with all applicable Environmental Protection Agency (EPA) standards

Competency 3.0.2: Use power tools and stationary equipment

Competency Builders:

3.0.2.1 Identify types of power tools and stationary equipment
3.0.2.2 Select, set up, and use power tools and stationary equipment
3.0.2.3 Inspect and maintain power tools and stationary equipment
3.0.2.4 Store accessories in designated area

Competency 3.0.3: Use portable electrical and pneumatic equipment

Competency Builders:

3.0.3.1 Follow standard safety procedures
3.0.3.2 Select and use portable electric and pneumatic equipment
3.0.3.3 Inspect, clean, adjust, and repair tools as needed
3.0.3.4 Store tools in designated area
3.0.3.5 Remove worn and unsafe tools from service

Competency 3.0.4: Operate power cleaning equipment

Competency Builders:

3.0.4.1 Wear personal safety apparatus
3.0.4.2 Check and service power cleaning equipment before each use
3.0.4.3 Set up and use power cleaning equipment
3.0.4.4 Inspect and maintain power cleaning equipment
3.0.4.5 Store power cleaning equipment in designated area

Unit 4: Fasteners

Competency 4.0.1: Select proper type of fastener

Competency Builders:

4.0.1.1 Select proper grades and types of bolts and nuts
4.0.1.2 Select proper type of alternate fasteners
4.0.1.3 Maintain accurate inventory of all fasteners

Competency 4.0.2: Remove seized fasteners

Competency Builders:

4.0.2.1 Select proper removal tools and hardware
4.0.2.2 Use drilling and extracting tools
4.0.2.3 Store removal tools in designated area after each use

Competency 4.0.3: Restore internal and external threads

Competency Builders:

4.0.3.1 Select proper threading tools
4.0.3.2 Use threading tools
4.0.3.3 Store threading tools in designated area after each use

Unit 5: Welding, Soldering, and Heat-Treating Equipment

Competency 5.0.1: Practice established safety procedures when using heat-producing tools and equipment

Competency Builders:

5.0.1.1 Wear personal safety apparatus
5.0.1.2 Use caution when handling hot materials
5.0.1.3 Check work area for safety hazards

Competency 5.0.2: Operate oxyacetylene welding, brazing, and cutting equipment

Competency Builders:

5.0.2.1 Select proper type of fire extinguisher and safety equipment
5.0.2.2 Select, inspect, and set up oxyacetylene components
5.0.2.3 Inspect, service, and adjust regulators and connections
5.0.2.4 Weld or cut with oxyacetylene equipment
5.0.2.5 Shut down and disconnect oxyacetylene equipment
5.0.2.6 Store and secure equipment in designated area

Competency 5.0.3: Solder with propane torch

Competency Builders:

5.0.3.1 Select proper grade of solder
5.0.3.2 Set up and use propane torch
5.0.3.3 Shut down and disconnect propane equipment
5.0.3.4 Store and secure equipment in designated area

Competency 5.0.4: Solder with soldering gun

Competency Builders:

5.0.4.1 Select proper grade of solder
5.0.4.2 Select and use proper size of solder gun
5.0.4.3 Store solder and gun in designated area

Competency 5.0.5: Solder with soldering iron

Competency Builders:

5.0.5.1 Select proper grade of solder
5.0.5.2 Select and use proper size of soldering iron
5.0.5.3 Store solder and iron in designated area

Competency 5.0.6: Operate arc welder

Competency Builders:

5.0.6.1 Follow established safety procedures
5.0.6.2 Set up and adjust arc-welding equipment
5.0.6.3 Select electrode type
5.0.6.4 Weld with arc-welding equipment
5.0.6.5 Turn off and disconnect components
5.0.6.6 Store components in designated area

Competency 5.0.7: Operate metal inert gas (MIG) welder*

Competency Builders:

5.0.7.1 Follow established safety procedures*
5.0.7.2 Set up and adjust MIG welding equipment*
5.0.7.3 Weld with MIG equipment*
5.0.7.4 Turn off and disconnect components*
5.0.7.5 Store components in designated area*

Competency 5.0.8: Operate tungsten inert gas (TIG) welder*

Competency Builders:

5.0.8.1 Follow established safety procedures*
5.0.8.2 Set up and adjust TIG equipment*
5.0.8.3 Weld with TIG equipment*
5.0.8.4 Turn off and disconnect components*
5.0.8.5 Store components in designated area*

Unit 6: Manufacturers' Parts, Service, and Software Materials

Competency 6.0.1: Maintain microfiche and computer resources

Competency Builders:

6.0.1.1 Inspect software files to ensure proper placement of materials
6.0.1.2 Use software resources to locate part numbers
6.0.1.3 Return materials to proper sequence after each use
6.0.1.4 Perform periodic maintenance on hardware

* Advancing
** Futuring

Competency 6.0.2: Locate engine identification numbers

Competency Builders:

6.0.2.1 Refer to service manuals for location of numbers
6.0.2.2 Find identification numbers on engines

Competency 6.0.3: Locate unit identification numbers

Competency Builders:

6.0.3.1 Refer to service manual for location of numbers
6.0.3.2 Find identification numbers on unit

Competency 6.0.4: Record and interpret identification and reference numbers

Competency Builders:

6.0.4.1 Refer to service manuals to interpret model numbers
6.0.4.2 Note specifications for model referenced

Competency 6.0.5: Use specifications from manual(s) in determining parts analysis decisions

Competency Builders:

6.0.5.1 Utilize specification charts to record size specifications
6.0.5.2 Compare actual measurements with specifications

Competency 6.0.6: Identify replacement part numbers

Competency Builders:

6.0.6.1 Use manufacturer's numbering system to locate correct parts listing
6.0.6.2 Locate needed part and reference or variance numbers
6.0.6.3 Use reference or variance numbers to determine part number
6.0.6.4 Record part number, refer to current price guide, and determine availability and price

Competency 6.0.7: Record part numbers and prices on work order

Competency Builders:

6.0.7.1 Fill out work orders
6.0.7.2 Record part number, description, quantity, and price on work order
6.0.7.3 Compile list and calculate totals for cost of repair parts
6.0.7.4 Review work order and check for accuracy

Competency 6.0.8: Refer to manufacturers' bulletins

Competency Builders:

6.0.8.1 Review parts bulletins for obsolete parts
6.0.8.2 Review service bulletins periodically
6.0.8.3 Record changes in part numbers according to bulletin announcements

Competency 6.0.9: Use computer to locate part storage location*

Competency Builders:

6.0.9.1 Access computer inventory system*
6.0.9.2 Delete or add to inventory count*

Unit 7: Disassembly, Inspection, and Reassembly of Two-Cycle and Four-Cycle Engines

Competency 7.0.1: Practice established safety procedures during disassembly and reassembly

Competency Builders:

7.0.1.1 Wear personal safety apparatus
7.0.1.2 Follow standard safety procedures when using hand tools

Competency 7.0.2: Disassemble engine

Competency Builders:

7.0.2.1 Drain and properly store or dispose of all fluids
7.0.2.2 Disassemble carburetion and fuel systems
7.0.2.3 Disassemble ignition and short block assemblies
7.0.2.4 Inspect parts for signs of needed repairs

Competency 7.0.3: Identify parts

Competency Builders:

7.0.3.1 Identify fuel system components
7.0.3.2 Identify ignition and short block assemblies
7.0.3.3 Tag and arrange parts on bench

Competency 7.0.4: Clean and measure parts and analyze for wear

Competency Builders:

7.0.4.1 Record manufacturer's specifications for parts
7.0.4.2 Measure and record actual size or worn dimensions of parts
7.0.4.3 Compare manufacturer's specifications with actual measurements when making analysis
7.0.4.4 Compile list of parts needed to complete task

Competency 7.0.5: Service, recondition, repair, or replace defective parts

Competency Builders:

7.0.5.1 Recondition or replace worn parts
7.0.5.2 Use manufacturer's part numbers when requesting replacement components
7.0.5.3 Follow manufacturer's repair instructions when replacing parts

* Advancing
** Futuring

Competency 7.0.6: Reassemble engine

Competency Builders:

7.0.6.1 Assemble short block and ignition components according to manufacturer's specifications
7.0.6.2 Assemble carburetion and fuel systems according to manufacturer's specifications
7.0.6.3 Adjust components during reassembly

Competency 7.0.7: Test engine

Competency Builders:

7.0.7.1 Mount engine onto test stand or in/onto unit
7.0.7.2 Add lubricant and fuel according to manufacturer's specifications
7.0.7.3 Place engine in well-ventilated area
7.0.7.4 Start engine
7.0.7.5 Analyze engine performance while running
7.0.7.6 Make necessary adjustments

Unit 8: Ignition Systems

Competency 8.0.1: Practice established safety procedures

Competency Builders:

8.0.1.1 Wear personal safety apparatus
8.0.1.2 Hook up electronic testing equipment

Competency 8.0.2: Inspect and service/replace spark plugs

Competency Builders:

8.0.2.1 Differentiate between types of plug styles, heat ranges, and numbering systems
8.0.2.2 Remove, inspect, and analyze plug(s)
8.0.2.3 Determine if plug wear is normal or due to another cause
8.0.2.4 Select, install, and retorque plugs according to manufacturer's specifications

Competency 8.0.3: Test and analyze magneto, battery, electronic, and computerized ignition systems

Competency Builders:

8.0.3.1 Differentiate between types of ignition systems
8.0.3.2 Use electronic testing equipment
8.0.3.3 Compile list of parts needed for repair
8.0.3.4 Store testing equipment in designated area

Competency 8.0.4: Replace and adjust ignition system components

Competency Builders:

8.0.4.1 Identify common replacement parts of ignition system
8.0.4.2 Use manufacturer's parts system to locate replacement part numbers
8.0.4.3 Secure needed replacement parts and install according to manufacturer's specifications
8.0.4.4 Conduct spark test upon completion of service

Unit 9: Fuel Systems

Competency 9.0.1: Practice established safety procedures

Competency Builders:

9.0.1.1 Wear personal safety apparatus
9.0.1.2 Store fuels in designated safety areas using metal containers approved by Occupational Safety and Health Administration (OSHA)
9.0.1.3 Use caution when handling gasoline and working on fuel systems
9.0.1.4 Clean fuel spills immediately
9.0.1.5 Ensure engine is switched off and cold before adding fuel

Competency 9.0.2: Inspect and service/replace air cleaners

Competency Builders:

9.0.2.1 Differentiate types of air-filtering systems
9.0.2.2 Disassemble, inspect, analyze, and service/replace components as needed
9.0.2.3 Dispose of used parts or components appropriately

Competency 9.0.3: Inspect fuel system components

Competency Builders:

9.0.3.1 Check condition of fuel tanks, lines, filters, and connections
9.0.3.2 Analyze inspection results and list needed parts for repair
9.0.3.3 Replace, service, or repair components
9.0.3.4 Dispose of used parts or components appropriately

Competency 9.0.4: Inspect and rebuild carburetors

Competency Builders:

9.0.4.1 Differentiate common types of carburetors
9.0.4.2 Disassemble, inspect, analyze, and repair/replace components according to manufacturer's specifications
9.0.4.3 Install carburetor and make initial adjustment
9.0.4.4 Start engine and make final adjustments

* Advancing
** Futuring

Competency 9.0.5: Service, test, and adjust fuel injectors

Competency Builders:

9.0.5.1 Differentiate types of fuel injectors and operational characteristics
9.0.5.2 Disassemble, inspect, analyze, and repair/replace components according to manufacturer's specifications
9.0.5.3 Install fuel injectors and make initial adjustments
9.0.5.4 Start engine and make final adjustments

Competency 9.0.6: Service and rebuild fuel pumps

Competency Builders:

9.0.6.1 Differentiate types of fuel pumps
9.0.6.2 Locate, remove, and disassemble fuel pumps
9.0.6.3 Inspect fuel pump components
9.0.6.4 Perform required repairs and reinstall pump to unit
9.0.6.5 Start engine to check installation and function

Competency 9.0.7: Trace fuel and airflow of induction systems

Competency Builders:

9.0.7.1 Differentiate types of airflow induction systems
9.0.7.2 Differentiate types of air-filtering devices
9.0.7.3 Inspect interior of induction system for possible leaks
9.0.7.4 Perform required repairs and reinstall components
9.0.7.5 Start engine to check installation and function

Competency 9.0.8: Perform wastegate test on turbocharger systems*

Competency Builders:

9.0.8.1 Locate wastegate*
9.0.8.2 Test functioning*
9.0.8.3 Perform required repairs and reinstall components*
9.0.8.4 Start engine to check installation and function*

Competency 9.0.9: Service alternate fuel systems

Competency Builders:

9.0.9.1 Identify alternate fuel systems
9.0.9.2 Inspect and maintain alternate fuel systems
9.0.9.3 Perform required repairs and reinstall components
9.0.9.4 Start engine to check installation and function

Unit 10: Governor Systems

Competency 10.0.1: Practice established safety procedures

Competency Builders:

10.0.1.1 Wear personal safety apparatus
10.0.1.2 Follow standard safety procedures when using hand tools

Competency 10.0.2: Inspect, repair, and adjust all linkage, springs, bellcranks, and diaphragm speed-control components

Competency Builders:

10.0.2.1 Differentiate types of speed-control systems and related components
10.0.2.2 Disassemble, inspect, analyze, and repair components according to manufacturer's specifications
10.0.2.3 Reassemble speed-control devices according to manufacturer's specifications

Competency 10.0.3: Adjust speed-controlling devices according to manufacturer's specifications

Competency Builders:

10.0.3.1 Inspect settings on speed-controlling devices
10.0.3.2 Inspect components of speed-controlling devices
10.0.3.3 Replace or repair components of speed-controlling devices
10.0.3.4 Reinstall and adjust components
10.0.3.5 Preset components prior to test run

Competency 10.0.4: Test unit with actual or simulated load

Competency Builders:

10.0.4.1 Place unit in well-ventilated test area
10.0.4.2 Start engine
10.0.4.3 Compare revolutions per minute (RPM) with manufacturer's specifications
10.0.4.4 Make necessary adjustments to meet specifications

Unit 11: Lubrication Systems

Competency 11.0.1: Practice established safety procedures

Competency Builders:

11.0.1.1 Dispose of oily rags in proper container according to Environmental Protection Agency (EPA) requirements
11.0.1.2 Clean up spills immediately
11.0.1.3 Dispose of used oil according to Occupational Safety and Health Administration (OSHA) and EPA requirements
11.0.1.4 Handle hot lubricants carefully

Competency 11.0.2: Change oil and filter

Competency Builders:

11.0.2.1 Run engine to normal operating temperature and turn off
11.0.2.2 Select proper tools and equipment
11.0.2.3 Drain oil and remove filter
11.0.2.4 Reinstall drain plug and filter and torque to specifications
11.0.2.5 Fill crankcase with specified oil and check level
11.0.2.6 Dispose of used oil and filter according to EPA requirements

Competency 11.0.3: Inspect and service crankcase breathers

Competency Builders:

11.0.3.1 Locate and identify crankcase breather components
11.0.3.2 Inspect for proper functioning
11.0.3.3 Repair or replace defective components
11.0.3.4 Start engine and check system operation

Competency 11.0.4: Service or repair oil pumps, screens, lines, and splashers

Competency Builders:

11.0.4.1 Distinguish between types of lubrication circulation systems
11.0.4.2 Inspect system components for signs of wear or needed service
11.0.4.3 Repair or replace components
11.0.4.4 Start engine and check system operation

Competency 11.0.5: Inspect and service internal lubrication components

Competency Builders:

11.0.5.1 Disassemble internal components
11.0.5.2 Check condition of components
11.0.5.3 Perform required service or repairs
11.0.5.4 Reassemble components
11.0.5.5 Start engine and check system function

Competency 11.0.6: Select and store oil and lubricants

Competency Builders:

11.0.6.1 Distinguish types of lubricant according to usage
11.0.6.2 Refer to manufacturer's specifications for capacity and viscosity
11.0.6.3 Store lubricants in designated area according to OSHA and EPA requirements

Unit 12: Cooling Systems

Competency 12.0.1: Practice established safety procedures

Competency Builders:

12.0.1.1 Wear personal safety apparatus
12.0.1.2 Handle coolant and other cooling system chemicals carefully
12.0.1.3 Release caps from pressurized systems carefully
12.0.1.4 Store coolant and other cooling system chemicals in designated area according to Environmental Protection Agency (EPA) requirements

Competency 12.0.2: Remove shroud and clean fins and housing

Competency Builders:

12.0.2.1 Secure proper tools and materials prior to servicing
12.0.2.2 Disassemble and inspect air-cooled system components
12.0.2.3 Analyze results and perform necessary service or repairs
12.0.2.4 Reassemble system according to manufacturer's directions

Competency 12.0.3: Conduct pressure and coolant tests on liquid-cooled engines

Competency Builders:

12.0.3.1 Identify and select required tools
12.0.3.2 Conduct pressure and coolant checks according to manufacturer's recommendations
12.0.3.3 Compare findings with manufacturer's specifications and analyze results
12.0.3.4 Secure necessary repair parts or materials
12.0.3.5 Perform service or repairs according to manufacturer's specifications

Competency 12.0.4: Check and replace thermostats, fans, and radiators

Competency Builders:

12.0.4.1 Identify system components
12.0.4.2 Turn engine off before servicing cooling fans
12.0.4.3 Set up and use testing equipment
12.0.4.4 Compare test results with manufacturer's specifications
12.0.4.5 Analyze condition of system components and determine needed repairs
12.0.4.6 Make necessary repairs

Competency 12.0.5: Inspect and repair/replace water pumps, lines, and connections

Competency Builders:

12.0.5.1 Locate and visually inspect components for leaks
12.0.5.2 Check condition of hoses and connections
12.0.5.3 Repair or replace faulty components

Competency 12.0.6: Perform seasonal service on cooling systems

Competency Builders:

12.0.6.1 Refer to manufacturer's recommendations for seasonal servicing
12.0.6.2 Service system components to acceptable specifications
12.0.6.3 Follow recommended procedures for storing units to be placed out of service
12.0.6.4 Document status of system for future reference

Competency 12.0.7: Check system operation

Competency Builders:

12.0.7.1 Place unit in safe, well-ventilated test area
12.0.7.2 Check cooling system levels and fins
12.0.7.3 Start unit and allow for normal operating temperature
12.0.7.4 Check for proper circulation and cooling under normal operating conditions
12.0.7.5 Store unit in designated area

Unit 13: Lighting, Accessory, and Charging Systems

Competency 13.0.1: Practice established safety procedures

Competency Builders:

13.0.1.1 Wear personal safety apparatus
13.0.1.2 Use caution when working with electronic testing equipment
13.0.1.3 Make connections according to manufacturer's recommendations when using testing instruments
13.0.1.4 Perform all electrical tests on nonmetallic work surfaces
13.0.1.5 Maintain dry work area when bench-testing components

Competency 13.0.2: Trace current flow of electrical systems

Competency Builders:

13.0.2.1 Interpret schematic drawing
13.0.2.2 Trace current flow of circuit on a schematic drawing
13.0.2.3 Use wire codes to identify circuit
13.0.2.4 Inspect circuit from power source to electrical device

Competency 13.0.3: Conduct voltage, current, resistance, charging, and load tests

Competency Builders:

13.0.3.1 Select and use electrical testing equipment
13.0.3.2 Perform voltage, current, resistance, charging, and load tests
13.0.3.3 Compare test results with manufacturer's specifications
13.0.3.4 Compile list of needed repairs

Competency 13.0.4: Replace or service defective components

Competency Builders:

13.0.4.1 Consult manufacturer's replacement parts software when replacing defective components
13.0.4.2 Remove and replace components
13.0.4.3 Conduct performance check of parts replaced

Competency 13.0.5: Utilize electrical troubleshooting techniques

Competency Builders:

13.0.5.1 Explain manufacturer's recommendations in troubleshooting electrical systems
13.0.5.2 Locate circuit or component failure problems systematically
13.0.5.3 Compare test results with manufacturer's specifications in making final analysis
13.0.5.4 Compile list of needed repairs

Unit 14: Engine Tune-up

Competency 14.0.1: Practice established safety procedures

Competency Builders:

14.0.1.1 Maintain clean, well-organized work area
14.0.1.2 Wear personal safety apparatus
14.0.1.3 Follow standard safety procedures when using tools

Competency 14.0.2: Test compression

Competency Builders:

14.0.2.1 Identify, set up, and use compression-testing equipment
14.0.2.2 Assess condition and compare with manufacturer's specifications
14.0.2.3 Determine potential problems

Competency 14.0.3: De-carbon combustion chamber

Competency Builders:

14.0.3.1 Remove cylinder head and inspect combustion chamber
14.0.3.2 De-carbon cylinder head and combustion chamber components
14.0.3.3 Inspect head gasket for signs of leaks
14.0.3.4 Compile list of needed repair parts
14.0.3.5 Perform required repairs

Competency 14.0.4: Inspect and service valve train

Competency Builders:

14.0.4.1 Locate and identify valve train components
14.0.4.2 Remove valve train components according to manufacturer's recommendations
14.0.4.3 Clean, inspect, and service parts
14.0.4.4 Assemble valve train according to manufacturer's specifications

Unit 15: Removing and Installing Engines

Competency 15.0.1: Practice established safety procedures during engine removal and installation

Competency Builders:

15.0.1.1 Wear personal safety apparatus
15.0.1.2 Select and use jacking, hoisting, and supporting equipment
15.0.1.3 Disconnect and remove battery before beginning engine removal process
15.0.1.4 Double-check hookup assembly before attempting to lift engine out of unit

Competency 15.0.2: Prepare and secure unit for engine removal

Competency Builders:

15.0.2.1 Maneuver unit into work area
15.0.2.2 Secure unit with safety stands and holding devices
15.0.2.3 Double-check setup to ensure safety

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Competency 15.0.3: Tag and disconnect controls, wires, and lines

Competency Builders:

15.0.3.1 Tag all wires before disconnecting
15.0.3.2 Disconnect wires and controls
15.0.3.3 Disconnect lines and drain fluids

Competency 15.0.4: Secure engine and remove mounting bolts

Competency Builders:

15.0.4.1 Support engine before removing bolts
15.0.4.2 Remove mounting bolts
15.0.4.3 Store bolts systematically

Competency 15.0.5: Remove engine

Competency Builders:

15.0.5.1 Select and set up hoist equipment
15.0.5.2 Attach hoist line or chains
15.0.5.3 Hoist engine out of unit
15.0.5.4 Position engine on engine stand

Competency 15.0.6: Reinstall engine in unit

Competency Builders:

15.0.6.1 Attach hoist to engine
15.0.6.2 Lower engine into unit
15.0.6.3 Align engine onto mounting brackets
15.0.6.4 Tighten mounting bolts according to manufacturer's specifications
15.0.6.5 Reconnect controls, wires, and lines
15.0.6.6 Remove hoisting and supporting equipment

Competency 15.0.7: Test engine and make final adjustments

Competency Builders:

15.0.7.1 Refer to service manual and inspect arrangement of wires and control cables
15.0.7.2 Make all adjustments according to manufacturer's specifications
15.0.7.3 Add needed fuel, oil, and lubricants
15.0.7.4 Maneuver unit into well-ventilated test area
15.0.7.5 Start engine
15.0.7.6 Make final analysis of engine performance

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Unit 16: Power Takeoff (PTO) Accessories

Competency 16.0.1: Practice established safety procedures

Competency Builders:

16.0.1.1 Wear personal safety apparatus
16.0.1.2 Follow standard safety procedures when using tools
16.0.1.3 Identify possible safety catch point hazards
16.0.1.4 Follow standard equipment setup procedures
16.0.1.5 Ensure power is off before making adjustments and repairs

Competency 16.0.2: Inspect and repair/replace components in PTO accessories

Competency Builders:

16.0.2.1 Identify types of PTO accessories
16.0.2.2 Inspect, service, and/or repair components in PTO accessories

Competency 16.0.3: Install PTO accessories

Competency Builders:

16.0.3.1 Align and connect PTO components
16.0.3.2 Tighten attachments to unit
16.0.3.3 Double-check completed work before test-running unit
16.0.3.4 Test and verify that all safety components are in place and operational
16.0.3.5 Start engine and observe function to determine needed adjustments
16.0.3.6 Make final adjustments with power off

Competency 16.0.4: Adjust PTO clutches and drivetrains

Competency Builders:

16.0.4.1 Identify common clutches and drivetrains
16.0.4.2 Refer to manufacturer's recommendations for proper adjustment procedures
16.0.4.3 Inspect, service, and/or repair clutches and drivetrains
16.0.4.4 Check completed work before test-running unit
16.0.4.5 Start engine and observe function to determine needed adjustments
16.0.4.6 Make final adjustments with power off

Unit 17: Motion Drive Systems

Competency 17.0.1: Practice established safety procedures

Competency Builders:

17.0.1.1 Ensure power is off before servicing motion drive systems
17.0.1.2 Wear personal safety apparatus
17.0.1.3 Identify safety hazards before servicing motion drive systems

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Competency 17.0.2: Inspect, service, and repair manual, fluid, and electromagnetic clutches

Competency Builders:

17.0.2.1 Differentiate common types of clutch systems
17.0.2.2 Disassemble, inspect, and recondition/replace drive system components
17.0.2.3 Make adjustments according to manufacturer's specifications
17.0.2.4 Conduct final inspection before test-running unit

Competency 17.0.3: Inspect, service, and repair belt, shaft, and chain drive devices

Competency Builders:

17.0.3.1 Inspect components for wear
17.0.3.2 Remove, replace, or adjust drive components
17.0.3.3 Make adjustments according to manufacturer's specifications
17.0.3.4 Test and verify that all safety components are in place and operational
17.0.3.5 Conduct final inspection before test-running unit

Competency 17.0.4: Remove and replace motion drive system

Competency Builders:

17.0.4.1 Select tools and equipment
17.0.4.2 Demonstrate safe use of hoisting equipment
17.0.4.3 Secure unit before removing and replacing drive system
17.0.4.4 Follow manufacturer's service manual for proper procedure

Competency 17.0.5: Disassemble, inspect, and reassemble transmissions, transaxles, transmissions, and differentials in frame

Competency Builders:

17.0.5.1 Refer to service manual for correct procedures
17.0.5.2 Identify types of transaxles, transmissions, and differentials
17.0.5.3 Identify system components and disassemble specified system
17.0.5.4 Perform required repairs
17.0.5.5 Reassemble and test system

Competency 17.0.6: Inspect, service, and repair hydraulic and pneumatic drives

Competency Builders:

17.0.6.1 Use extreme caution when inspecting high pressure lines
17.0.6.2 Identify types of hydraulic and pneumatic drive systems
17.0.6.3 Inspect systems for leaks or line wear
17.0.6.4 Service and repair system
17.0.6.5 Start engine and perform final inspection

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Unit 18: Frame, Suspension, and Steering Systems

Competency 18.0.1: Practice established safety procedures

Competency Builders:

18.0.1.1 Wear personal safety apparatus
18.0.1.2 Secure unit
18.0.1.3 Inspect frame, suspension, and steering systems for signs of wear
18.0.1.4 Follow established safety rules in selection and use of tools and equipment

Competency 18.0.2: Inspect components of frame, suspension, and steering systems for wear or damage

Competency Builders:

18.0.2.1 Inspect condition of system components
18.0.2.2 Determine minimum and maximum tolerances for normal wear according to manufacturer's specifications
18.0.2.3 Compare condition of system with manufacturer's specifications
18.0.2.4 Compile list of items or parts needed for repair

Competency 18.0.3: Service or repair worn components

Competency Builders:

18.0.3.1 Follow manufacturer's service recommendations for preventive service
18.0.3.2 Perform preventive service at specified intervals
18.0.3.3 Repair or replace worn or damaged components that do not meet specifications
18.0.3.4 Record maintenance work performed

Competency 18.0.4: Check frame and suspension systems for proper alignment and trueness

Competency Builders:

18.0.4.1 Refer to service manual for frame and suspension specifications
18.0.4.2 Inspect unit
18.0.4.3 Record findings
18.0.4.4 Perform required repairs

Unit 19: Tires, Wheels, and Brakes

Competency 19.0.1: Practice established safety procedures

Competency Builders:

19.0.1.1 Note potential safety hazards when working with tires, wheels, and brakes
19.0.1.2 Wear personal safety apparatus
19.0.1.3 Follow standard safety procedures when using tire-servicing tools and equipment

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Competency 19.0.2: Conduct wheel test for out-of-roundness

Competency Builders:

19.0.2.1 Select and set up equipment for checking out-of-roundness
19.0.2.2 Refer to manufacturer's specifications for allowable tolerances
19.0.2.3 Repair or replace components that do not meet specifications

Competency 19.0.3: Check for and replace broken or bent spokes

Competency Builders:

19.0.3.1 Differentiate common types of spoke lacing patterns
19.0.3.2 Check for bent or broken spokes
19.0.3.3 Repair or replace damaged or broken spokes

Competency 19.0.4: Balance wheels

Competency Builders:

19.0.4.1 Select equipment
19.0.4.2 Set up and operate equipment to locate out-of-balance conditions
19.0.4.3 Remove wheels from unit
19.0.4.4 Balance wheels according to manufacturer's specifications
19.0.4.5 Replace wheels on unit

Competency 19.0.5: Inflate tires to specified pressure

Competency Builders:

19.0.5.1 Use air pressure gauge
19.0.5.2 Determine whether tires require minimum or maximum allowable pressure
19.0.5.3 Inflate and adjust tire pressure to manufacturer's specifications

Competency 19.0.6: Remove, repair, or replace tube and tubeless tires

Competency Builders:

19.0.6.1 Remove wheel from unit
19.0.6.2 Remove tire from wheel using standard tire-changing equipment
19.0.6.3 Determine if propane-based sealant has been used in tire or tube before breaking the bead
19.0.6.4 Inspect tire and tube for signs of wear
19.0.6.5 Repair, replace, and remount tire according to manufacturer's specifications

Competency 19.0.7: Service, recondition, or replace brakes

Competency Builders:

19.0.7.1 Identify components of drum and disc brake systems
19.0.7.2 Inspect brake components for signs of needed repair
19.0.7.3 Recondition or replace brake components

Competency 19.0.8: Adjust brakes

Competency Builders:

19.0.8.1 Inspect brake components for proper installation and alignment
19.0.8.2 Adjust brakes according to manufacturer's specifications
19.0.8.3 Start and operate unit for short distance to assess accuracy of brake adjustment
19.0.8.4 Stop unit and make needed readjustments to brakes

Unit 20: Servicing Multicylinder Engines

Competency 20.0.1: Practice established safety procedures

Competency Builders:

20.0.1.1 Wear personal safety apparatus
20.0.1.2 Identify potential hazards of working with multicylinder engine units
20.0.1.3 Follow standard safety procedures when working with components in motion

Competency 20.0.2: Identify types of engines

Competency Builders:

20.0.2.1 Differentiate types of multicylinder engines
20.0.2.2 Identify cylinder arrangement, cycle, and general characteristics of engine

Competency 20.0.3: Determine engine operational sequence

Competency Builders:

20.0.3.1 Refer to manufacturer's service manual for firing-order sequence
20.0.3.2 Identify crankshaft throw design*
20.0.3.3 Remove valve cover, roll engine by hand, and observe operational sequence

Competency 20.0.4: Adjust valve train components

Competency Builders:

20.0.4.1 Record firing order and position crankshaft to top dead center with #1 cylinder on compression stroke
20.0.4.2 Check and adjust valve lash to manufacturer's specifications
20.0.4.3 Continue to rotate engine for additional valve sequence and cylinder positioning for correct adjustment
20.0.4.4 Double-check all adjustments
20.0.4.5 Replace valve cover and torque to specifications

Competency 20.0.5: Set timing to manufacturer's specifications

Competency Builders:

20.0.5.1 Select static or dynamic timing instruments
20.0.5.2 Set initial timing statically according to manufacturer's specifications
20.0.5.3 Connect dynamic timing light
20.0.5.4 Ensure wires are clear of potential hazards and start engine
20.0.5.5 Observe actual timing and adjust to manufacturer's specifications

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Competency 20.0.6: Adjust carburetor synchronization

Competency Builders:

20.0.6.1 Select and set up carburetor synchronization instruments
20.0.6.2 Refer to manufacturer's service manual for acceptable tolerances
20.0.6.3 Start engine and make adjustments
20.0.6.4 Start engine and analyze performance

Competency 20.0.7: Run cylinder leak-down test

Competency Builders:

20.0.7.1 Refer to service manual for leak-down testing procedure
20.0.7.2 Set up leak-down tester
20.0.7.3 Conduct test and record findings
20.0.7.4 Compare findings with manufacturer's specifications
20.0.7.5 Perform required repairs
20.0.7.6 Disconnect and store equipment

Unit 21: Troubleshooting

Competency 21.0.1: Practice established safety procedures

Competency Builders:

21.0.1.1 Wear personal safety apparatus
21.0.1.2 Follow standard safety procedures

Competency 21.0.2: Conduct tests on ignition systems

Competency Builders:

21.0.2.1 Conduct spark check with plug removed
21.0.2.2 Identify, set up, and use electronic testing equipment
21.0.2.3 Compare test data with manufacturer's specifications
21.0.2.4 Recondition, replace, and adjust components as needed

Competency 21.0.3: Inspect fuel system components

Competency Builders:

21.0.3.1 Check for leaks
21.0.3.2 Inspect fuel for contamination
21.0.3.3 Inspect mating surfaces and shafts for air leaks
21.0.3.4 Preset adjustments of components according to manufacturer's specifications

Competency 21.0.4: Run compression check in engines with and without automatic compression release

Competency Builders:

21.0.4.1 Refer to service manuals for pressure specifications
21.0.4.2 Use compression-testing equipment
21.0.4.3 Compare findings with specifications and analyze condition
21.0.4.4 List problems based on test findings
21.0.4.5 Make needed repairs

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Competency 21.0.5: Inspect governor and speed-control components

Competency Builders:

21.0.5.1 Inspect governor components for signs of wear
21.0.5.2 Refer to manufacturer's specifications for top governor speed RPM
21.0.5.3 Set idle and top RPM within specifications
21.0.5.4 Double-check completed work with appropriate testing equipment

Competency 21.0.6: Inspect safety lockout devices

Competency Builders:

21.0.6.1 Distinguish between types of safety lockout mechanisms
21.0.6.2 Use testing equipment according to manufacturer's recommendations
21.0.6.3 Inspect and repair/replace defective components
21.0.6.4 Test lockout systems

Competency 21.0.7: Inspect cooling and lubrication systems

Competency Builders:

21.0.7.1 Inspect cooling systems for signs of leaks or other service needs
21.0.7.2 Conduct system checks according to manufacturer's recommendations
21.0.7.3 Analyze system condition and make needed repairs
21.0.7.4 Inspect lubrication system and make analysis

Unit 22: Equipment Maintenance and Storage

Competency 22.0.1: Practice established safety procedures

Competency Builders:

22.0.1.1 Wear personal safety apparatus
22.0.1.2 Maintain clean and orderly work area
22.0.1.3 Remove spark plug(s) from engine before servicing

Competency 22.0.2: Drain and clean fuel system components

Competency Builders:

22.0.2.1 Use compressed air according to Occupational Safety and Health Administration (OSHA) specifications
22.0.2.2 Handle caustic substances according to material safety data sheets (MSDSs)
22.0.2.3 Dispose of used gasoline and caustic substances according to Environmental Protection Agency (EPA) requirements

Competency 22.0.3: Service, clean, and sharpen power saw chain

Competency Builders:

22.0.3.1 Identify pitch and cutter style of chain
22.0.3.2 Clean chain with proper solvent
22.0.3.3 Inspect chain for damage
22.0.3.4 Repair or replace cracked or broken links
22.0.3.5 Sharpen according to manufacturer's specifications
22.0.3.6 Reinstall and adjust chain according to manufacturer's specifications

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Competency 22.0.4: Remove, clean, inspect, sharpen, and balance cutting blades

Competency Builders:

22.0.4.1 Remove spark plug(s) before servicing cutting blade
22.0.4.2 Remove blade
22.0.4.3 Clean and inspect blade for wear and/or damage
22.0.4.4 Cover one end of blade when sharpening opposite end
22.0.4.5 Sharpen and balance blade
22.0.4.6 Remount blade

Competency 22.0.5: Retorque mounting bolts or nuts

Competency Builders:

22.0.5.1 Use new blade bolt each time blade is removed
22.0.5.2 Select proper grade and thread bolt
22.0.5.3 Torque blade bolt or nut to manufacturer's specifications
22.0.5.4 Recheck and record reading on work order

Competency 22.0.6: Service batteries

Competency Builders:

22.0.6.1 Wear personal safety apparatus
22.0.6.2 Remove battery from unit
22.0.6.3 Clean dirt and corrosion from exterior surface
22.0.6.4 Inspect battery components for signs of damage
22.0.6.5 Set up and operate charger
22.0.6.6 Conduct test on battery
22.0.6.7 Reinstall new or serviced battery into unit
22.0.6.8 Dispose of old battery according to OSHA and EPA specifications

Competency 22.0.7: Check and adjust air pressure in tires

Competency Builders:

22.0.7.1 Inspect tires and tubes for signs of wear
22.0.7.2 Inflate or reduce pressure according to recommendations on sidewalls

Competency 22.0.8: Clean, repair, and paint decks, frames, and sheet metal covers and shrouds

Competency Builders:

22.0.8.1 Wear personal safety apparatus
22.0.8.2 Remove rust or corrosion
22.0.8.3 Remove gas tank from unit when making welding repairs
22.0.8.4 Clean, prime, and paint surfaces according to paint manufacturer's directions
22.0.8.5 Clean and store painting equipment
22.0.8.6 Store unused paint in designated safe area

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Competency 22.0.9: Prepare unit for off-season storage

Competency Builders:

22.0.9.1 Drain gasoline from tank
22.0.9.2 Start engine and allow carburetor(s) to run dry
22.0.9.3 Coat cylinder(s) with oil
22.0.9.4 Drain and refill crankcase with oil
22.0.9.5 Remove and store battery
22.0.9.6 Store unit in dry, well-ventilated area

Unit 23: Customer Relations

Competency 23.0.1: Review operational safety issues when dealing with customers

Competency Builders:

23.0.1.1 Explain customer safety policy
23.0.1.2 Advise customers of potential shop safety hazards
23.0.1.3 Explain liability considerations when dealing with customers
23.0.1.4 Maintain nonargumentative status when dealing with customers

Competency 23.0.2: Demonstrate courtesy when communicating with customers

Competency Builders:

23.0.2.1 Practice tactfulness when talking with customers
23.0.2.2 Assist in loading and unloading of units to be serviced
23.0.2.3 Use special care when handling customer-owned units
23.0.2.4 Fill out work order completely and check it with customer
23.0.2.5 Obtain customer signature on work order

Competency 23.0.3: Tag and store units according to shop policy

Competency Builders:

23.0.3.1 Code tag and attach to unit
23.0.3.2 Issue claim check to customer
23.0.3.3 Place tagged unit in preservice area

Competency 23.0.4: Follow service repair routine

Competency Builders:

23.0.4.1 Follow approved shop policy/procedure when servicing units
23.0.4.2 Troubleshoot and analyze potential problems before disassembly
23.0.4.3 Preorder commonplace replacement parts before beginning work
23.0.4.4 Communicate with service manager during repairs
23.0.4.5 Communicate with customer during repairs

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Competency 23.0.5: Calculate estimates*

Competency Builders:

23.0.5.1 Refer to manufacturer's parts list and price book in calculating cost*
23.0.5.2 Record flat rate permitted for repair and figure labor cost*
23.0.5.3 List parts and labor estimates on work order*
23.0.5.4 Calculate estimated total cost for repair*
23.0.5.5 Contact customer and obtain approval before proceeding with repairs*

Competency 23.0.6: Use appropriate telephone manners when scheduling customer service work

Competency Builders:

23.0.6.1 State identity when answering telephone
23.0.6.2 Greet customer with enthusiasm
23.0.6.3 List and read back requested service and/or repair needs
23.0.6.4 Schedule time of delivery or pickup within reasonable time parameters
23.0.6.5 Confirm delivery and work to be done by summarizing before ending conversation
23.0.6.6 Express gratitude to customer for calling

Unit 24: Employability Skills

Subunit 24.1: Career Development

Competency 24.1.1: Investigate career options

Competency Builders:

24.1.1.1 Determine interests and aptitudes
24.1.1.2 Identify career options
24.1.1.3 Research occupations matching interests and aptitudes
24.1.1.4 Select career(s) that best match(es) interests and aptitudes
24.1.1.5 Identify advantages and disadvantages of career options, including nontraditional careers
24.1.1.6 Assess differences in wages, annual incomes, and job opportunities based on geographic location
24.1.1.7 Develop a career plan

Competency 24.1.2: Analyze potential barriers to employment

Competency Builders:

24.1.2.1 Identify common barriers to employment
24.1.2.2 Describe strategies to overcome employment barriers

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Unit 24: Employability Skills
Subunit 24.2: Decision Making and Problem Solving

Competency 24.2.1: Apply decision-making techniques in the workplace

Competency Builders:

24.2.1.1 Identify the decision to be made
24.2.1.2 Compare alternatives
24.2.1.3 Determine consequences of each alternative
24.2.1.4 Make decisions based on values and goals
24.2.1.5 Evaluate the decision made

Competency 24.2.2: Apply problem-solving techniques in the workplace

Competency Builders:

24.2.2.1 Diagnose the problem and its causes
24.2.2.2 Identify alternatives and their consequences in relation to the problem
24.2.2.3 Examine multicultural and nonsexist dimensions of problem solving
24.2.2.4 Utilize resources to explore possible solutions to the problem
24.2.2.5 Compare and contrast the advantages and disadvantages of each solution
24.2.2.6 Determine appropriate action
24.2.2.7 Evaluate results

Unit 24: Employability Skills
Subunit 24.3: Work Ethic

Competency 24.3.1: Evaluate the relationship of self-esteem to work ethic

Competency Builders:

24.3.1.1 Identify special characteristics and abilities in self and others
24.3.1.2 Identify internal and external factors that affect self-esteem

Competency 24.3.2: Analyze the relationship of personal values and goals to work ethic both in and out of the workplace

Competency Builders:

24.3.2.1 Distinguish between values and goals
24.3.2.2 Determine the importance of values and goals
24.3.2.3 Evaluate how values affect goals
24.3.2.4 Identify short-term and long-term goals
24.3.2.5 Prioritize personal goals
24.3.2.6 Describe how personal values are reflected in work ethic
24.3.2.7 Describe how interactions in the workplace affect personal work ethic
24.3.2.8 Examine how life changes affect personal work ethic

Competency 24.3.3: Demonstrate work ethic

Competency Builders:

24.3.3.1 Examine factors that influence work ethic
24.3.3.2 Exhibit characteristics that reflect an appropriate work ethic

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Unit 24: Employability Skills
Subunit 24.4: Job-Seeking Skills

Competency 24.4.1: Prepare for employment

Competency Builders:

24.4.1.1 Identify traditional and nontraditional employment sources
24.4.1.2 Utilize employment sources
24.4.1.3 Research job opportunities, including nontraditional careers
24.4.1.4 Interpret equal employment opportunity laws
24.4.1.5 Explain the critical importance of personal appearance, hygiene, and demeanor throughout the employment process
24.4.1.6 Prepare for generic employment tests and those specific to an occupation/organization

Competency 24.4.2: Design a résumé

Competency Builders:

24.4.2.1 Identify personal strengths and weaknesses
24.4.2.2 List skills and/or abilities, career objective(s), accomplishments/achievements, educational background, and work experience
24.4.2.3 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
24.4.2.4 Complete résumé using various formats
24.4.2.5 Secure references

Competency 24.4.3: Complete and process job application forms

Competency Builders:

24.4.3.1 Explain the importance of an application form
24.4.3.2 Identify ways to obtain job application forms
24.4.3.3 Describe methods for handling illegal questions on job application forms
24.4.3.4 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
24.4.3.5 Return application to proper person, request interview, and follow up

Competency 24.4.4: Demonstrate interviewing skills

Competency Builders:

24.4.4.1 Investigate interview environment and procedures
24.4.4.2 Explain the critical importance of personal appearance, hygiene, and demeanor
24.4.4.3 Demonstrate question and answer techniques
24.4.4.4 Demonstrate methods for handling difficult and/or illegal interview questions

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Competency 24.4.5: Secure employment

Competency Builders:

24.4.5.1 Identify present and future employment opportunities within an occupation/organization
24.4.5.2 Research the organization/company
24.4.5.3 Use follow-up techniques to enhance employment potential
24.4.5.4 Compare and evaluate job offers

Unit 24: Employability Skills
Subunit 24.5: Job Retention Skills

Competency 24.5.1: Analyze the organizational structure of the workplace

Competency Builders:

24.5.1.1 Identify and evaluate employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
24.5.1.2 Be aware of and obey all company policies and procedures
24.5.1.3 Examine the role/relationship between employee and employer
24.5.1.4 Recognize opportunities for advancement and reasons for termination

Competency 24.5.2: Maintain positive relations with others

Competency Builders:

24.5.2.1 Exhibit appropriate work habits and attitude
24.5.2.2 Identify behaviors to establish successful working relationships
24.5.2.3 Cooperate and compromise through teamwork and group participation
24.5.2.4 Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

Unit 24: Employability Skills
Subunit 24.6: Job Advancement

Competency 24.6.1: Analyze opportunities for personal and career growth

Competency Builders:

24.6.1.1 Determine opportunities within an occupation/organization
24.6.1.2 Compare and contrast other opportunities
24.6.1.3 List benefits of job advancement
24.6.1.4 Evaluate factors involved when assuming a new position within or outside an occupation/organization

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Competency 24.6.2: Exhibit characteristics needed for advancement

Competency Builders:

24.6.2.1 Display a positive attitude
24.6.2.2 Demonstrate knowledge of a position
24.6.2.3 Perform quality work
24.6.2.4 Adapt to changing situations and technology
24.6.2.5 Demonstrate capability for different positions
24.6.2.6 Participate in continuing education/training programs
24.6.2.7 Respect, accept, and work with ALL individuals in the workplace

Unit 24: Employability Skills
Subunit 24.7: Technology in the Workplace

Competency 24.7.1: Assess the impact of technology in the workplace

Competency Builders:

24.7.1.1 Cite how past business/industry practices have influenced present business/industry processes
24.7.1.2 Investigate the use of technology in the workplace
24.7.1.3 Analyze how present skills can be applied to learning new technologies

Competency 24.7.2: Use a variety of technological applications

Competency Builders:

24.7.2.1 Explore basic mathematical, scientific, computer, and technological principles
24.7.2.2 Use technology to accomplish assigned tasks
24.7.2.3 Create solutions to problems using technical means

Unit 24: Employability Skills
Subunit 24.8: Lifelong Learning

Competency 24.8.1: Apply lifelong learning to individual situations

Competency Builders:

24.8.1.1 Define lifelong learning
24.8.1.2 Identify factors that cause the need for lifelong learning

Competency 24.8.2: Adapt to change

Competency Builders:

24.8.2.1 Analyze the effects of change
24.8.2.2 Identify reasons why goals change
24.8.2.3 Describe the importance of flexibility when reevaluating goals
24.8.2.4 Evaluate the need for continuing education/training

Unit 24: Employability Skills
Subunit 24.9: Economic Education

Competency 24.9.1: Analyze global enterprise system

Competency Builders:

24.9.1.1 Identify characteristics of various enterprise systems
24.9.1.2 Examine the relationship between competition, risk, and profit
24.9.1.3 Illustrate how supply and demand influence price

Competency 24.9.2: Evaluate personal money management

Competency Builders:

24.9.2.1 Describe the need for personal management records
24.9.2.2 Identify methods of taxation
24.9.2.3 Analyze how credit affects financial security
24.9.2.4 Compare types and methods of investments
24.9.2.5 Prepare a personal budget
24.9.2.6 Be an informed and responsible consumer
24.9.2.7 Analyze the effects of advertising on the consumer

Unit 24: Employability Skills
Subunit 24.10: Balancing Work and Family

Competency 24.10.1: Analyze the effects of family on work

Competency Builders:

24.10.1.1 Recognize how family values, goals, and priorities are reflected in the workplace
24.10.1.2 Identify present and future family structures and responsibilities
24.10.1.3 Describe personal and family roles
24.10.1.4 Analyze concerns of working parent(s)
24.10.1.5 Examine how family responsibilities can conflict with work
24.10.1.6 Resolve family-related conflicts
24.10.1.7 Explain how to use support systems/community resources to help resolve family-related conflicts

Competency 24.10.2: Analyze the effects of work on family

Competency Builders:

24.10.2.1 Identify responsibilities associated with paid and nonpaid work
24.10.2.2 Compare the advantages and disadvantages of multiple incomes
24.10.2.3 Explain how work can conflict with family responsibilities
24.10.2.4 Explain how work-related stress can affect families
24.10.2.5 Identify family support systems and resources

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Unit 24: Employability Skills
Subunit 24.11: Citizenship in the Workplace

Competency 24.11.1: Exercise the rights and responsibilities of citizenship in the workplace

Competency Builders:

24.11.1.1 Identify the basic rights and responsibilities of citizenship
24.11.1.2 Examine the history and contributions of all racial, ethnic, and cultural groups

Competency 24.11.2: Cooperate with others in the workplace

Competency Builders:

24.11.2.1 Identify situations in which compromise is necessary
24.11.2.2 Examine how individuals from various backgrounds contribute to work-related situations
24.11.2.3 Demonstrate initiative to facilitate cooperation
24.11.2.4 Give and receive constructive criticism to enhance cooperation

Unit 24: Employability Skills
Subunit 24.12: Leadership

Competency 24.12.1: Evaluate leadership styles appropriate for the workplace

Competency Builders:

24.12.1.1 Identify characteristics of effective leaders
24.12.1.2 Compare leadership styles
24.12.1.3 Demonstrate effective delegation skills
24.12.1.4 Identify opportunities to lead in the workplace

Competency 24.12.2: Demonstrate effective teamwork skills

Competency Builders:

24.12.2.1 Identify the responsibilities of a valuable group member
24.12.2.2 Exhibit open-mindedness
24.12.2.3 Identify methods of involving each member of a team
24.12.2.4 Contribute to the efficiency and success of a group
24.12.2.5 Determine ways to motivate others

Competency 24.12.3: Utilize effective communication skills

Competency Builders:

24.12.3.1 Identify the importance of listening
24.12.3.2 Demonstrate assertive communication
24.12.3.3 Recognize the importance of verbal and nonverbal cues and messages
24.12.3.4 Analyze written material
24.12.3.5 Prepare written material
24.12.3.6 Give and receive feedback
24.12.3.7 Articulate thoughts
24.12.3.8 Use appropriate language

Unit 24: Employability Skills

Subunit 24.13: Entrepreneurship

Competency 24.13.1: Evaluate the role of small business in the economy

Competency Builders:

24.13.1.1 Identify the benefits of small business to a community
24.13.1.2 Analyze opportunities for small business in a community

Competency 24.13.2: Examine considerations of starting a business

Competency Builders:

24.13.2.1 Research a business idea
24.13.2.2 Compare various ways to become a small business owner
24.13.2.3 Investigate factors to consider in financing a new business
24.13.2.4 Evaluate entrepreneurship as a career option

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